

ATS-12-430

Form 3160-3
(April 2008)

RECEIVED
MAY 10 2012
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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

5 Lease Serial No.
NMNM-114990

6 If Indian, Allottee or Tribe Name

7 If Unit or CA Agreement, Name and No

8 Lease Name and Well No
Ichabod 7 Federal 4H **<38479>**

9 API Well No
<6137> 30-025-40574

10 Field and Pool, or Exploratory
WC-025 G-06 S263407P; DELAUNAY

11 Sec, T R M or Blk and Survey or Area
SEC 7 T26S R34E

1a Type of work ☒ DRILL ☐ REENTER

1b Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2 Name of Operator
Devon Energy Production Company, LP

3a Address **20 North Broadway
Oklahoma City, Oklahoma City 73102-8260**

3b. Phone No. (include area code)
405-552-8135

4 Location of Well (Report location clearly and in accordance with any State requirements *)
At surface **108 FSL & 455 FEL Unit P**
At proposed prod zone **330 FNL & 1070 FEL Unit A PP: 108 FSL & 455 FEL**

14. Distance in miles and direction from nearest town or post office*
Approximately 18 miles west of Jal, NM.

12 County or Parish
Lea County

13 State
NM

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg unit line, if any) **See Attached Map**

16 No of acres in lease
1241.6 Acres

17 Spacing Unit dedicated to this well
160 Acres

18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft **See Attached Map**

19. Proposed Depth
9490' MD 14,443' TVD

20 BLM/BIA Bond No on file
CO-1104 + NMB000801

21 Elevations (Show whether DF, KDB, RT, GL, etc)
3367.8' GL

22 Approximate date work will start*

23 Estimated duration
45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, shall be attached to this form

- 1 Well plat certified by a registered surveyor
- 2 A Drilling Plan
- 3 A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office)

- 4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
- 5. Operator certification
- 6 Such other site specific information and/or plans as may be required by the authorized officer

25 Signature 
Title **Regulatory Specialist**

Name (Printed/Typed)
Judy A. Barnett

Date
02/23/2012

Approved by (Signature)
/s/ Don Peterson

Name (Printed/Typed)

MAY 10 2012

Title
FIELD MANAGER

Office
CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon
Conditions of approval, if any, are attached
APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*(Instructions on page 2)

Carlsbad Controlled Water Basin

K. J. 05/16/12

Approval Subject to General Requirements
& Special Stipulations Attached

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

MAY 17 2012

DRILLING PROGRAM

Devon Energy Production Company, LP

Ichabod 7 Federal 4H

Surface Location: 108' FSL & 455' FEL, Unit P, Sec 7 T26S R34E, Lea, NM

Bottom Location: 330' FNL & 1070' FEL, Unit A, Sec 7 T26S R34E, Lea, NM

1. Geologic Name of Surface Formation

a. Quaternary

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

a. Water	180'	Fresh Water
b. Rustler Dol.	903'	
c. Salado Salt	1330'	
d. Base of Salt	5306'	
e. Bell Canyon	5390'	oil/gas
f. Cherry Canyon	6392'	oil/gas
g. Brushy Canyon	8035'	oil/gas
h. Bone Spring	9603'	oil
i. Total Depth	14,443'	

Producing formation: Brushy Canyon

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13 3/8" casing at 930' and circulating cement back to surface. The fresh water sands will be protected by setting 9 5/8" casing at 5415' and circulating cement to surface. The production intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement above the base of the 9 5/8" casing. All casing is new and API approved.

3. Casing Program:

see
COA

<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
17-1/2"	0 - 930	13-3/8"	0 - 930	48#	STC	H-40
12-1/4"	1360 - 5415	9-5/8"	0 - 5415	40#	LTC	J-55
8-3/4"	5415 - 9050	5-1/2"	0 - 9050	17#	LTC	P110
8-3/4"	9050 - 14443'	5-1/2"	9050 - 14443	17#	BTC	P110

Design Parameter Factors:

<u>Casing Size</u>	<u>Collapse Design Factor</u>	<u>Burst Design Factor</u>	<u>Tension Design Factor</u>
13-3/8" 48# H-40 STC	1.53	3.58	7.21
9-5/8" 40# J-55 LTC	1.35	1.40	3.89
5-1/2" 17# P110 LTC	1.71	2.43	1.81
5-1/2" 17# P110 BTC	1.78	2.53	6.20

4. **Cement Program:** (all cement volumes based on at least 25% excess)

13-3/8" Surface	Lead w/ 505 sacks ExtendaCem – CZ, 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive) Density: 13.5 ppg Yield: 1.75 TOC @ Surface . Tail w/340 sacks HalCem – C, 2 % Calcium Chloride - Flake (Accelerator), 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive) Density 14.8 ppg Yield: 1.35 cf/sk
9-5/8" Intermediate	Lead w/ 1310 sacks EconoCem – HLC, 5 % Salt, 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive) Density 12.7 ppg Yield: 1.94 cf/sk TOC @ surface Tail w/ 490 sacks HalCem – C, 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive) Density 14.8 ppg Yield: 1.33 cf/sk
5-1/2" Production	<p>1st Stage Lead w/ 565 sacks EconoCem – HLH, 0.2 % HR-601 (Retarder) Density 12.5 ppg Yield: 1.95 cf/sk. Tail w/ 1560 sacks VersaCem –H, 0.5 % Halad®-344 (Low Fluid Loss Control), 0.4 % CFR-3 (Dispersant), 1 lbm/sk Salt (Salt), 0.1 % HR-601 (Retarder) Density 14.5 ppg Yield: 1.22 cf/sk TOC @ 6,500' DV TOOL@ 6500'</p> <p>2nd Stage Lead w/ 170 sacks ExtendaCem – C, 1 % Calcium Chloride - Flake (Accelerator), 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive) Density 11.4 ppg Yield: 2.89 cf/sk Tail: 150 sacks EconoCem - C (Mod), 0.1 % Econolite (Light Weight Additive), 2 % Salt (Salt), 4 % Silicalite (Light Weight Additive), 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive) Density 13.8 ppg Yield: 1.357 cf/sk</p> <p>TOC for All Strings: Surface: 0 Intermediate: 0 Production: 4915'</p>

The above cement volumes could be revised pending the caliper measurement from the open hole logs. The top of cement is designed to reach approximately 500' above the 9 5/8" casing shoe. All casing is new and API approved.

Positive standoff centralizers will be utilized for the production string every other joint of casing from 100' MD above KOP or at the legal footage setback, whichever is the deeper MD, up to TOC.

5. **Pressure Control Equipment:**

The BOP system used to drill the 12-1/4" and 8-3/4" holes will consist of a 13-5/8" 3M Triple Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 3M system prior to drilling out the prior casing shoe.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

6. **Proposed Mud Circulation System**

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc</u>	<u>Fluid Loss</u>	<u>Type System</u>
0 - 930' ⁸⁰⁰	8.4 - 9.0	30 - 34	N/C	FW
930 - 5415' ⁵²⁵⁰	9.8 - 10.0	28 - 32	N/C	Brine
5415 - 14,443'	8.6 - 9.0	28 - 32	N/C	FW

The necessary mud products for weight addition and fluid loss control will be on location at all times.

7. **Auxiliary Well Control and Monitoring Equipment:**

- A Kelly cock will be in the drill string at all times.
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

8. **Logging, Coring, and Testing Program:** *See CoA*

- Drill stem tests will be based on geological sample shows.
- If a drill stem test is anticipated; a procedure, equipment to be used and safety measures will be provided via sundry notice to the BLM.
- The open hole electrical logging program will be:
 - Total Depth to Intermediate Casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron - Z Density log with Gamma Ray and Caliper.
 - Total Depth to Surface Compensated Neutron with Gamma Ray
 - No coring program is planned
 - Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

9. **Potential Hazards:**

- a. No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area; therefore, no H₂S is anticipated to be encountered. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 4600 psi and Estimated BHT 135°.

10. **Anticipated Starting Date and Duration of Operations:**

- a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 32 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

Depending on rig availability, Devon may set the surface casing using an Ashton Oilfield Services rig. The rig plat is attached. This rig will be used only to set the surface casing and will leave the location once the surface casing has been run and cemented. Another rig will drill the remainder of the wellbore. The reasons for using the smaller rig to set surface are: rig availability and economics.

The BLM will be contacted 24 hours prior to commencing drilling operations. The surface casing will be run and cemented back to surface as per the approved APD. The well will be secured with a cap welded onto the surface casing. Another rig will be on location to drill the remainder of the wellbore within 60 days after the Ashton rig has left the location.

Devon

PHOENIX
L.A. SINGAPORE SERVICES

Project: Lea County, NM (Nad83)
Site: Ichabod 7 Federal
Well: Ichabod 7 Fed 4H
Wellbore: Wellbore #1
Plan: Plan #1 021712
Rig: McVay #8

devon

WELL DETAILS Ichabod 7 Fed 4H

Ground Level	3368.00
Northing	383282.28
Easting	798928.94
Latitude	32° 3' 3.5867 N
Longitude	103° 30' 6.888 W

FORMATION TOP DETAILS

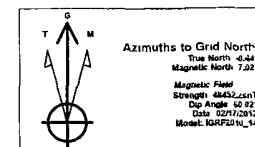
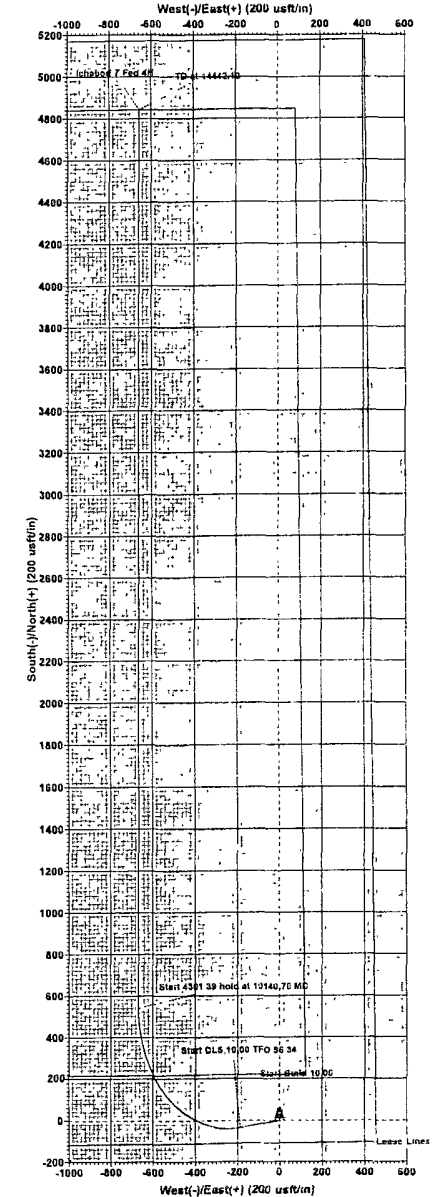
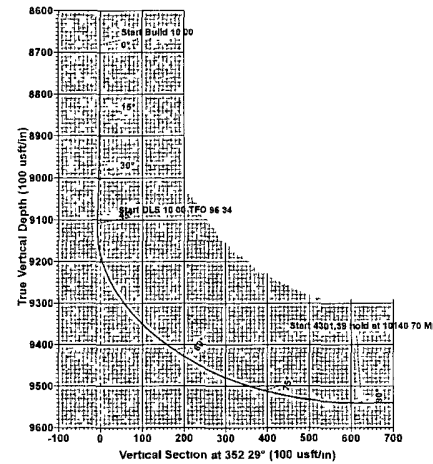
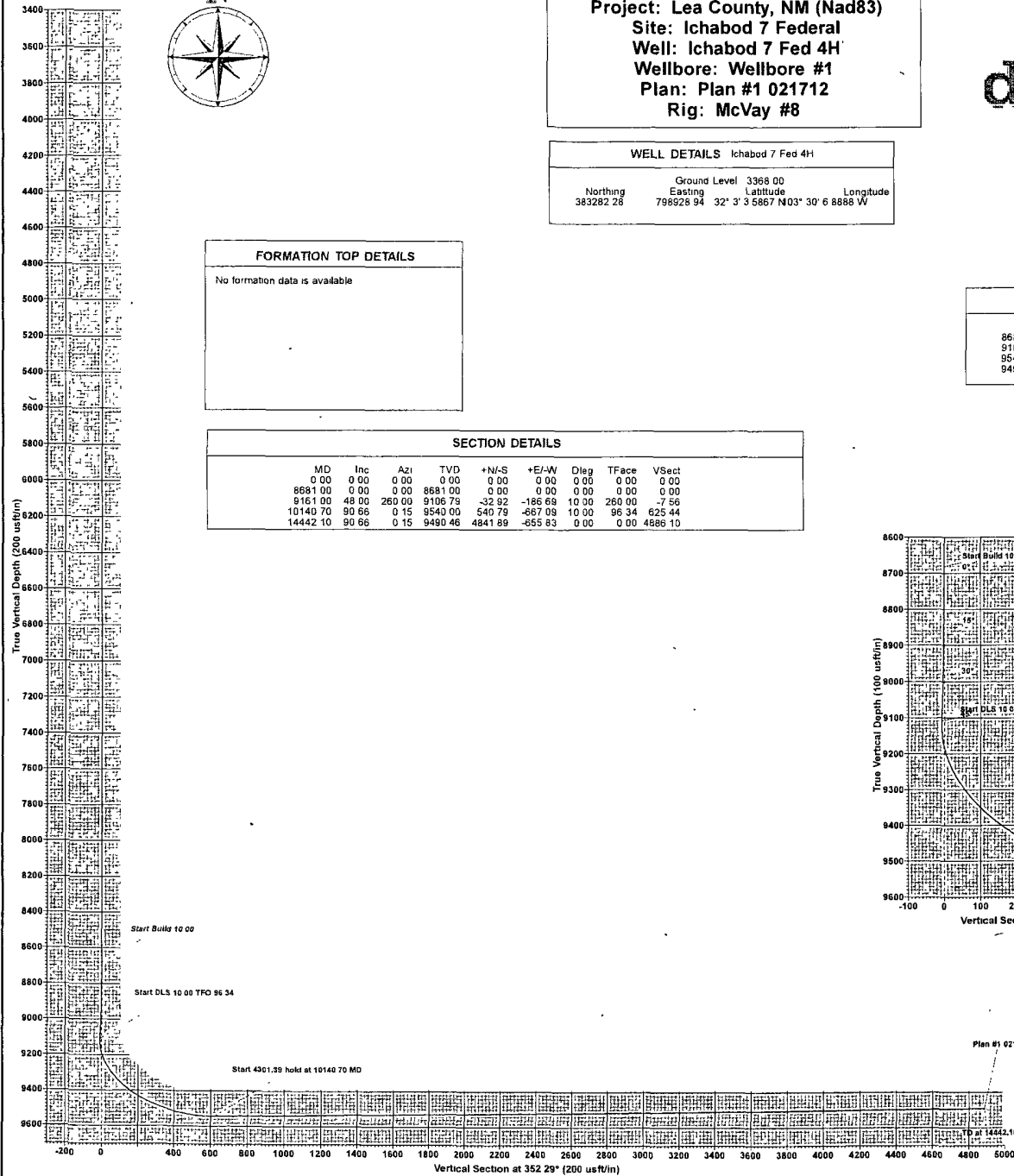
No formation data is available

SECTION DETAILS

MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8681.00	0.00	0.00	8681.00	0.00	0.00	0.00	0.00	0.00
9161.00	48.00	260.00	9106.79	-32.92	-186.69	10.00	260.00	-7.56
10140.70	90.66	0.15	9540.00	540.79	-867.09	10.00	96.34	625.44
14442.10	90.66	0.15	9490.46	4841.89	-855.83	0.00	0.00	4888.10

ANNOTATIONS

TVD	MD	Annotation
8681.00	8681.00	Start Build 10.00
9106.79	9161.00	Start DLS 10.00 TFO 96.34
9540.00	10140.70	Start 4301.39 hold at 10140.70 MD
9490.46	14442.10	TD at 14442.10





PHOENIX
TECHNOLOGY SERVICES

Devon

Lea County, NM (Nad83)
Ichabod 7 Federal
Ichabod 7 Fed 4H
Wellbore #1

Plan: Plan #1 021712

Devon Energy Inc.

17 February, 2012



PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services
Devon Energy Inc.



Company:	Devon	Local Co-ordinate Reference:	Well: Ichabod 7, Fed 4H
Project:	Lea County, NM (Nad83)	TVD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Site:	Ichabod 7, Federal	MD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Well:	Ichabod 7, Fed 4H	North Reference:	Gnd
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1-021712	Database:	GCR DB.v5000

Project: Lea County, NM (Nad83)			
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site: Ichabod 7, Federal									
Site Position:		Northing:		383,282.28	usft	Latitude:	32° 3' 3.5867 N		
From:	Map	Easting:		798,928.94	usft	Longitude:	103° 30' 6.8888 W		
Position Uncertainty:		0.00	usft	Slot Radius:		13-3/16	"	Grid Convergence:	0.44 °

Well	Ichabod 7, Fed 4H					
Well Position	+N-S	0.00 usft	Northings:	383,282.28 usft	Latitude:	32° 3' 3.5867 N
	+E-W	0.00 usft	Easting:	798,928.94 usft	Longitude:	103° 30' 6.8888 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,368.00 usft

Wellbore		Wellbore #1			
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010_14	02/17/12	7.46	60.02	48,452

Design		Plan #1-021712		
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	352.29

Survey/Tool Program		Date 02/17/12		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0 00	14,442 00	Plan #1 021712 (Wellbore #1)	MWD	MWD - Standard



Phoenix Technology Services
Devon Energy Inc.



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Site:	Ichabod 7 Federal	MD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Well:	Ichabod 7 Fed 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 021712	Database:	GCR/DB v5000

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.00	0.00	0.00	-3,387.00	0.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
100.00	0.00	0.00	-3,287.00	100.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
200.00	0.00	0.00	-3,187.00	200.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
300.00	0.00	0.00	-3,087.00	300.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
400.00	0.00	0.00	-2,987.00	400.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
500.00	0.00	0.00	-2,887.00	500.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
600.00	0.00	0.00	-2,787.00	600.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
700.00	0.00	0.00	-2,687.00	700.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
800.00	0.00	0.00	-2,587.00	800.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
900.00	0.00	0.00	-2,487.00	900.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
1,000.00	0.00	0.00	-2,387.00	1,000.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
1,100.00	0.00	0.00	-2,287.00	1,100.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
1,200.00	0.00	0.00	-2,187.00	1,200.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
1,300.00	0.00	0.00	-2,087.00	1,300.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
1,400.00	0.00	0.00	-1,987.00	1,400.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
1,500.00	0.00	0.00	-1,887.00	1,500.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
1,600.00	0.00	0.00	-1,787.00	1,600.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
1,700.00	0.00	0.00	-1,687.00	1,700.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
1,800.00	0.00	0.00	-1,587.00	1,800.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
1,900.00	0.00	0.00	-1,487.00	1,900.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
2,000.00	0.00	0.00	-1,387.00	2,000.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
2,100.00	0.00	0.00	-1,287.00	2,100.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
2,200.00	0.00	0.00	-1,187.00	2,200.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
2,300.00	0.00	0.00	-1,087.00	2,300.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
2,400.00	0.00	0.00	-987.00	2,400.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
2,500.00	0.00	0.00	-887.00	2,500.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
2,600.00	0.00	0.00	-787.00	2,600.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	



Phoenix Technology Services
Devon Energy Inc.



Company:	Devon	Local Co-ordinate Reference:	Well Ichabod 7- Fed 4H
Project:	Lea County, NM (Nad83)	TVD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Site:	Ichabod 7 Federal	MD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Well:	Ichabod 7 Fed 4H	North Reference:	Grid
Wellbore:	Wellbore #	Survey Calculation Method:	Minimum Curvature
Design:	Plan # 1.021712	Database:	GCR-DB.v5000

Planned Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec. (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)		
2,700.00	0.00	0.00	-687.00	2,700.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
2,800.00	0.00	0.00	-587.00	2,800.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
2,900.00	0.00	0.00	-487.00	2,900.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
3,000.00	0.00	0.00	-387.00	3,000.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
3,100.00	0.00	0.00	-287.00	3,100.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
3,200.00	0.00	0.00	-187.00	3,200.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
3,300.00	0.00	0.00	-87.00	3,300.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
3,400.00	0.00	0.00	13.00	3,400.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
3,500.00	0.00	0.00	113.00	3,500.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
3,600.00	0.00	0.00	213.00	3,600.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
3,700.00	0.00	0.00	313.00	3,700.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
3,800.00	0.00	0.00	413.00	3,800.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
3,900.00	0.00	0.00	513.00	3,900.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
4,000.00	0.00	0.00	613.00	4,000.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
4,100.00	0.00	0.00	713.00	4,100.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
4,200.00	0.00	0.00	813.00	4,200.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
4,300.00	0.00	0.00	913.00	4,300.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
4,400.00	0.00	0.00	1,013.00	4,400.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
4,500.00	0.00	0.00	1,113.00	4,500.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
4,600.00	0.00	0.00	1,213.00	4,600.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
4,700.00	0.00	0.00	1,313.00	4,700.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
4,800.00	0.00	0.00	1,413.00	4,800.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
4,900.00	0.00	0.00	1,513.00	4,900.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
5,000.00	0.00	0.00	1,613.00	5,000.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
5,100.00	0.00	0.00	1,713.00	5,100.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
5,200.00	0.00	0.00	1,813.00	5,200.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
5,300.00	0.00	0.00	1,913.00	5,300.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		



Phoenix Technology Services
Devon Energy Inc.



Company:	Devon	Local Co-ordinate Reference:	Well Ichabod 7 Fed 4H
Project:	Lea County NM (Nad83)	TVD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Site:	Ichabod 7 Federal	MD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Well:	Ichabod 7 Fed 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 021712	Database:	GCR DB v5000

Planned Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)		
5,400.00	0.00	0.00	2,013.00	5,400.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
5,500.00	0.00	0.00	2,113.00	5,500.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
5,600.00	0.00	0.00	2,213.00	5,600.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
5,700.00	0.00	0.00	2,313.00	5,700.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
5,800.00	0.00	0.00	2,413.00	5,800.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
5,900.00	0.00	0.00	2,513.00	5,900.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
6,000.00	0.00	0.00	2,613.00	6,000.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
6,100.00	0.00	0.00	2,713.00	6,100.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
6,200.00	0.00	0.00	2,813.00	6,200.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
6,300.00	0.00	0.00	2,913.00	6,300.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
6,400.00	0.00	0.00	3,013.00	6,400.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
6,500.00	0.00	0.00	3,113.00	6,500.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
6,600.00	0.00	0.00	3,213.00	6,600.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
6,700.00	0.00	0.00	3,313.00	6,700.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
6,800.00	0.00	0.00	3,413.00	6,800.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
6,900.00	0.00	0.00	3,513.00	6,900.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
7,000.00	0.00	0.00	3,613.00	7,000.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
7,100.00	0.00	0.00	3,713.00	7,100.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
7,200.00	0.00	0.00	3,813.00	7,200.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
7,300.00	0.00	0.00	3,913.00	7,300.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
7,400.00	0.00	0.00	4,013.00	7,400.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
7,500.00	0.00	0.00	4,113.00	7,500.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
7,600.00	0.00	0.00	4,213.00	7,600.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
7,700.00	0.00	0.00	4,313.00	7,700.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
7,800.00	0.00	0.00	4,413.00	7,800.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
7,900.00	0.00	0.00	4,513.00	7,900.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		
8,000.00	0.00	0.00	4,613.00	8,000.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94		



Phoenix Technology Services
Devon Energy Inc.



Company:	Devon	Local Co-ordinate Reference:	Well: Ichabod 7 Fed 4H
Project:	Lea County NM (Nad83)	TVD Reference:	WELL @ 3387'00usft (Original Well Elev + 19' KB)
Site:	Ichabod 7 Federal	MD Reference:	WELL @ 3387'00usft (Original Well Elev + 19' KB)
Well:	Ichabod 7 Fed 4H	North Reference:	Grid:
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 021712	Database:	GCR DB v5000

Planned Survey											
MD (usft)	Inc. (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
8,100.00	0.00	0.00	4,713.00	8,100.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
8,200.00	0.00	0.00	4,813.00	8,200.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
8,300.00	0.00	0.00	4,913.00	8,300.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
8,400.00	0.00	0.00	5,013.00	8,400.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
8,500.00	0.00	0.00	5,113.00	8,500.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
8,600.00	0.00	0.00	5,213.00	8,600.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
8,681.00	0.00	0.00	5,294.00	8,681.00	0.00	0.00	0.00	0.00	383,282.28	798,928.94	
Start Build 10.00											
8,700.00	1.90	260.00	5,313.00	8,700.00	-0.05	-0.31	-0.01	10.00	383,282.23	798,928.63	
8,800.00	11.90	260.00	5,412.15	8,799.15	-2.14	-12.13	-0.49	10.00	383,280.14	798,916.81	
8,900.00	21.90	260.00	5,507.71	8,894.71	-7.18	-40.72	-1.65	10.00	383,275.10	798,888.22	
9,000.00	31.90	260.00	5,596.77	8,983.77	-15.03	-85.22	-3.45	10.00	383,267.25	798,843.72	
9,100.00	41.90	260.00	5,676.64	9,063.64	-25.44	-144.27	-5.84	10.00	383,256.84	798,784.67	
9,161.00	48.00	260.00	5,719.79	9,106.79	-32.92	-186.69	-7.56	10.00	383,249.36	798,742.25	
Start DLS 10.00 TFO 96.34											
9,200.00	47.69	265.24	5,745.98	9,132.98	-36.63	-215.35	-7.40	10.00	383,245.65	798,713.59	
9,300.00	47.99	278.74	5,813.27	9,200.27	-34.04	-289.10	5.07	10.00	383,248.24	798,639.84	
9,400.00	49.83	291.80	5,879.15	9,266.15	-14.16	-361.48	34.49	10.00	383,268.12	798,567.46	
9,500.00	53.05	303.92	5,941.61	9,328.61	22.42	-430.29	79.97	10.00	383,304.70	798,498.65	
9,600.00	57.38	314.91	5,998.77	9,385.77	74.58	-493.44	140.14	10.00	383,356.86	798,435.50	
9,700.00	62.58	324.78	6,048.87	9,435.87	140.74	-549.00	213.15	10.00	383,423.02	798,379.94	
9,800.00	68.40	333.72	6,090.41	9,477.41	218.88	-595.29	296.80	10.00	383,501.16	798,333.65	
9,900.00	74.67	341.95	6,122.11	9,509.11	306.64	-630.90	388.55	10.00	383,588.92	798,298.04	
10,000.00	81.22	349.68	6,143.02	9,530.02	401.34	-654.76	485.59	10.00	383,683.62	798,274.18	
10,100.00	87.92	357.14	6,152.50	9,539.50	500.11	-666.13	585.00	10.00	383,782.39	798,262.81	
10,140.70	90.66	0.15	6,153.00	9,540.00	540.79	-667.09	625.44	10.00	383,823.07	798,261.85	
Start 4301.39 hold at 10140.70 MD											



Phoenix Technology Services
Devon Energy Inc.



Company:	Devon	Local Co-ordinate Reference:	Well Ichabod 7 Fed 4H
Project:	Lea County NM (Nad83)	TVD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Site:	Ichabod 7 Federal	MD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Well:	Ichabod 7 Fed 4H	North Reference:	Gnd
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 021712	Database:	GCR.DB V5000

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
10,200.00	90.66	0.15	6,152.32	9,539.32	600.08	-666.94	684.17	0.00	383,882.36	798,262.00	
10,300.00	90.66	0.15	6,151.17	9,538.17	700.08	-666.68	783.23	0.00	383,982.36	798,262.26	
10,400.00	90.66	0.15	6,150.02	9,537.02	800.07	-666.41	882.28	0.00	384,082.35	798,262.53	
10,500.00	90.66	0.15	6,148.87	9,535.87	900.06	-666.15	981.33	0.00	384,182.34	798,262.79	
10,600.00	90.66	0.15	6,147.71	9,534.71	1,000.06	-665.89	1,080.39	0.00	384,282.34	798,263.05	
10,700.00	90.66	0.15	6,146.56	9,533.56	1,100.05	-665.63	1,179.44	0.00	384,382.33	798,263.31	
10,800.00	90.66	0.15	6,145.41	9,532.41	1,200.04	-665.37	1,278.49	0.00	384,482.32	798,263.57	
10,900.00	90.66	0.15	6,144.26	9,531.26	1,300.04	-665.10	1,377.54	0.00	384,582.32	798,263.84	
11,000.00	90.66	0.15	6,143.11	9,530.11	1,400.03	-664.84	1,476.60	0.00	384,682.31	798,264.10	
11,100.00	90.66	0.15	6,141.95	9,528.95	1,500.02	-664.58	1,575.65	0.00	384,782.30	798,264.36	
11,200.00	90.66	0.15	6,140.80	9,527.80	1,600.01	-664.32	1,674.70	0.00	384,882.29	798,264.62	
11,300.00	90.66	0.15	6,139.65	9,526.65	1,700.01	-664.06	1,773.76	0.00	384,982.29	798,264.88	
11,400.00	90.66	0.15	6,138.50	9,525.50	1,800.00	-663.80	1,872.81	0.00	385,082.28	798,265.14	
11,500.00	90.66	0.15	6,137.35	9,524.35	1,899.99	-663.53	1,971.86	0.00	385,182.27	798,265.41	
11,600.00	90.66	0.15	6,136.19	9,523.19	1,999.99	-663.27	2,070.92	0.00	385,282.27	798,265.67	
11,700.00	90.66	0.15	6,135.04	9,522.04	2,099.98	-663.01	2,169.97	0.00	385,382.26	798,265.93	
11,800.00	90.66	0.15	6,133.89	9,520.89	2,199.97	-662.75	2,269.02	0.00	385,482.25	798,266.19	
11,900.00	90.66	0.15	6,132.74	9,519.74	2,299.97	-662.49	2,368.07	0.00	385,582.25	798,266.45	
12,000.00	90.66	0.15	6,131.59	9,518.59	2,399.96	-662.22	2,467.13	0.00	385,682.24	798,266.72	
12,100.00	90.66	0.15	6,130.44	9,517.44	2,499.95	-661.96	2,566.18	0.00	385,782.23	798,266.98	
12,200.00	90.66	0.15	6,129.28	9,516.28	2,599.94	-661.70	2,665.23	0.00	385,882.22	798,267.24	
12,300.00	90.66	0.15	6,128.13	9,515.13	2,699.94	-661.44	2,764.29	0.00	385,982.22	798,267.50	
12,400.00	90.66	0.15	6,126.98	9,513.98	2,799.93	-661.18	2,863.34	0.00	386,082.21	798,267.76	
12,500.00	90.66	0.15	6,125.83	9,512.83	2,899.92	-660.92	2,962.39	0.00	386,182.20	798,268.02	
12,600.00	90.66	0.15	6,124.68	9,511.68	2,999.92	-660.65	3,061.45	0.00	386,282.20	798,268.29	
12,700.00	90.66	0.15	6,123.52	9,510.52	3,099.91	-660.39	3,160.50	0.00	386,382.19	798,268.55	
12,800.00	90.66	0.15	6,122.37	9,509.37	3,199.90	-660.13	3,259.55	0.00	386,482.18	798,268.81	



Phoenix Technology Services
Devon Energy Inc.



Company:	Devon	Local Co-ordinate Reference:	Well Ichabod 7 Fed 4H
Project:	Lea County, NM (Nad83)	TVD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Site:	Ichabod 7, Federal	MD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Well:	Ichabod 7, Fed 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 021712	Database:	GCR:DB v5000

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
12,900.00	90.66	0.15	6,121.22	9,508.22	3,299.90	-659.87	3,358.61	0.00	386,582.18	798,269.07	
13,000.00	90.66	0.15	6,120.07	9,507.07	3,399.89	-659.61	3,457.66	0.00	386,682.17	798,269.33	
13,100.00	90.66	0.15	6,118.92	9,505.92	3,499.88	-659.35	3,556.71	0.00	386,782.16	798,269.59	
13,200.00	90.66	0.15	6,117.76	9,504.76	3,599.87	-659.08	3,655.76	0.00	386,882.15	798,269.86	
13,300.00	90.66	0.15	6,116.61	9,503.61	3,699.87	-658.82	3,754.82	0.00	386,982.15	798,270.12	
13,400.00	90.66	0.15	6,115.46	9,502.46	3,799.86	-658.56	3,853.87	0.00	387,082.14	798,270.38	
13,500.00	90.66	0.15	6,114.31	9,501.31	3,899.85	-658.30	3,952.92	0.00	387,182.13	798,270.64	
13,600.00	90.66	0.15	6,113.16	9,500.16	3,999.85	-658.04	4,051.98	0.00	387,282.13	798,270.90	
13,700.00	90.66	0.15	6,112.00	9,499.00	4,099.84	-657.77	4,151.03	0.00	387,382.12	798,271.17	
13,800.00	90.66	0.15	6,110.85	9,497.85	4,199.83	-657.51	4,250.08	0.00	387,482.11	798,271.43	
13,900.00	90.66	0.15	6,109.70	9,496.70	4,299.83	-657.25	4,349.14	0.00	387,582.11	798,271.69	
14,000.00	90.66	0.15	6,108.55	9,495.55	4,399.82	-656.99	4,448.19	0.00	387,682.10	798,271.95	
14,100.00	90.66	0.15	6,107.40	9,494.40	4,499.81	-656.73	4,547.24	0.00	387,782.09	798,272.21	
14,200.00	90.66	0.15	6,106.25	9,493.25	4,599.81	-656.47	4,646.29	0.00	387,882.09	798,272.47	
14,300.00	90.66	0.15	6,105.09	9,492.09	4,699.80	-656.20	4,745.35	0.00	387,982.08	798,272.74	
14,400.00	90.66	0.15	6,103.94	9,490.94	4,799.79	-655.94	4,844.40	0.00	388,082.07	798,273.00	
14,442.10	90.66	0.15	6,103.46	9,490.46	4,841.89	-655.83	4,886.10	0.00	388,124.17	798,273.11	
TD at 14442.10											

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,681.00	8,681.00	0.00	0.00	Start Build 10.00
9,161.00	9,106.79	-32.92	-186.69	Start DLS 10.00 TFO 96.34
10,140.70	9,540.00	540.79	-667.09	Start 4301.39 hold at 10140.70 MD
14,442.10	9,490.46	4,841.89	-655.83	TD at 14442.10



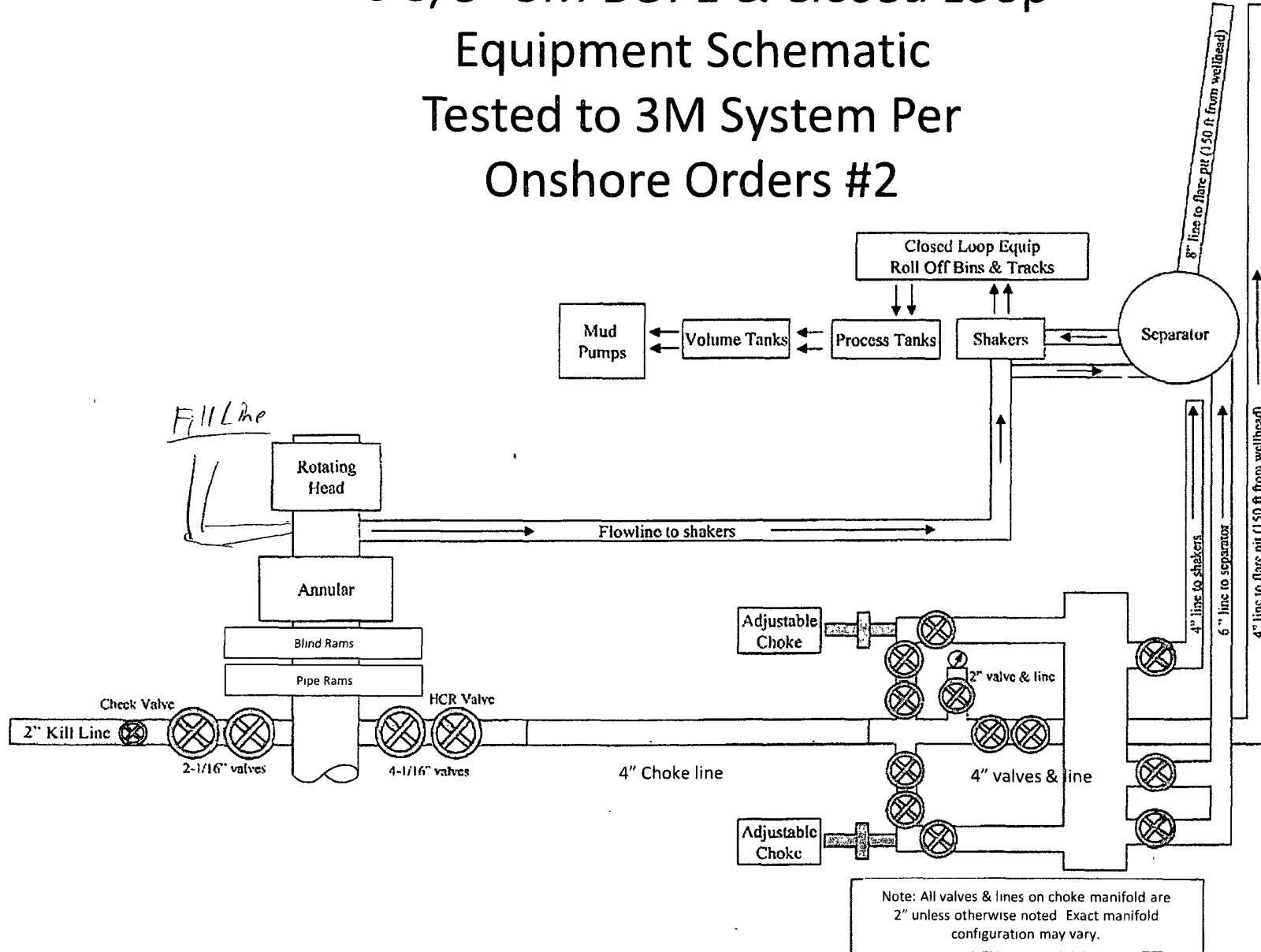
Phoenix Technology Services
Devon Energy Inc.



Company:	Devon	Local Co-ordinate Reference:	Well Ichabod 7 Fed 4H
Project:	Lea County NM (Nad83)	TVD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Site:	Ichabod 7 Federal	MD Reference:	WELL @ 3387.00usft (Original Well Elev + 19' KB)
Well:	Ichabod 7 Fed 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1-021712	Database:	GCR DB v5000

Checked By: _____	Approved By: _____	Date: _____
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13 5/8" 5M BOPE & Closed Loop Equipment Schematic Tested to 3M System Per Onshore Orders #2



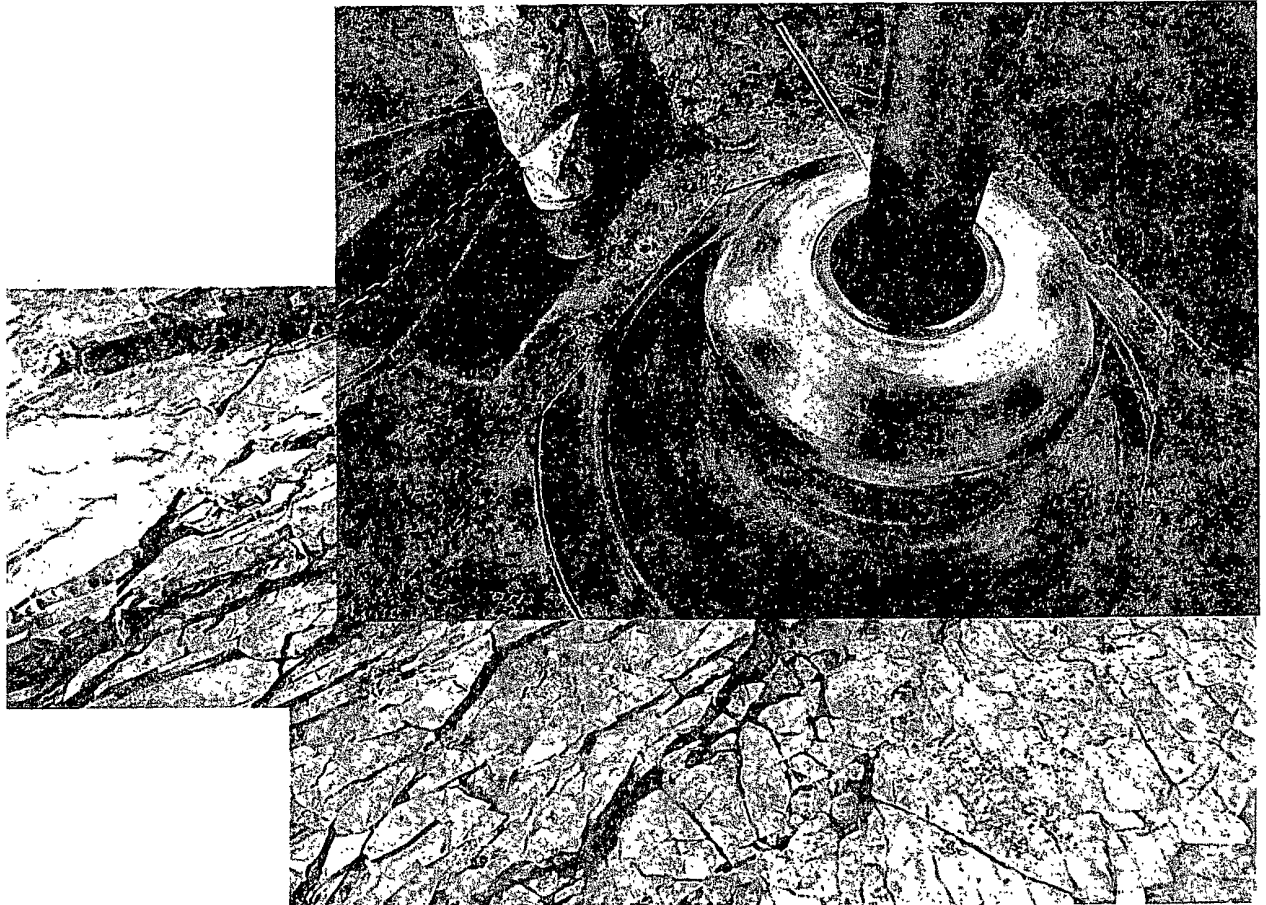
Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
Ichabod 7 Federal 4H

Surface Location: 108' FSL & 455' FEL, Unit P, Sec 7 T26S R34E, Lea, NM
Bottom Location: 330' FNL & 1070' FEL, Unit A, Sec 7 T26S R34E, Lea, NM

1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
2. Wear ring will be properly installed in head.
3. Blowout preventer and all associated fittings will be in operable condition to withstand a minimum 5000 psi working pressure.
4. All fittings will be flanged.
5. A full bore safety valve tested to a minimum 5000 psi WP with proper thread connections will be available on the rotary rig floor at all times.
6. All choke lines will be anchored to prevent movement.
7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.
8. Will maintain a kelly cock attached to the kelly.
9. Hand wheels and wrenches will be properly installed and tested for safe operation.
10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.
11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.



Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

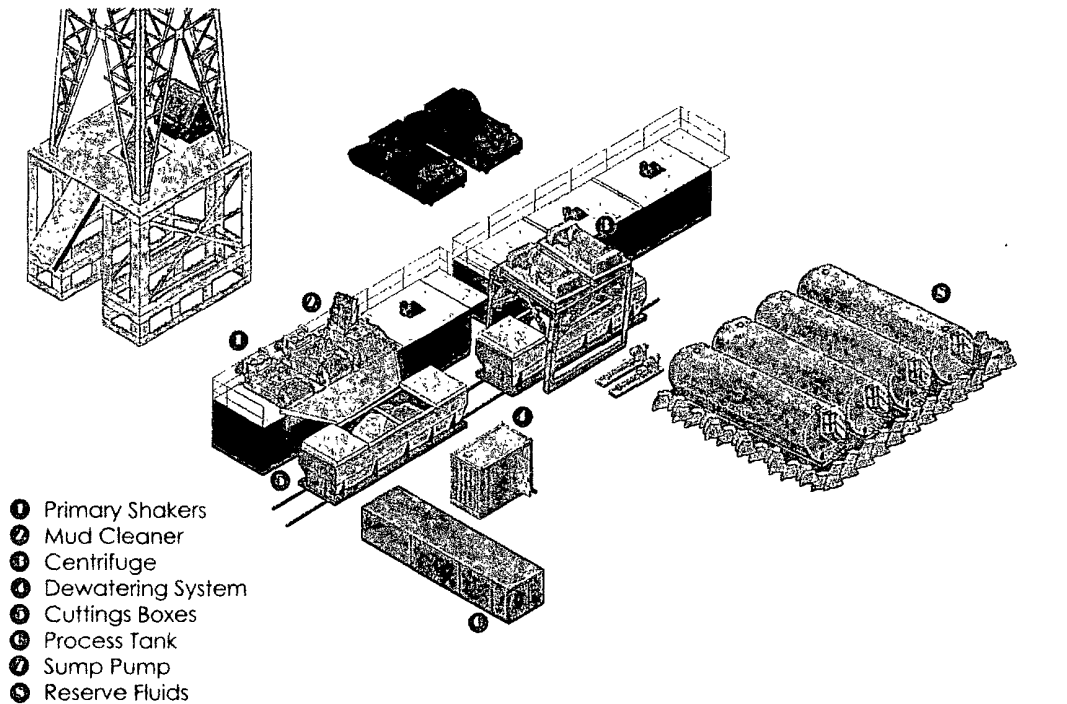
II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Closed Loop Schematic



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.